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DRESSING AND  
PACKING TURKEYS  
FOR MARKET



**T**HROUGH FAILURE to kill, dress, and market their turkeys according to the best methods, turkey producers as a rule do not receive as large a profit as they might.

This bulletin covers practically every phase of the approved methods used in the preparation of turkeys for market. It has been prepared as the result of several years of practical experience in poultry-packing plants and extensive study at terminal markets. By following its suggestions, producers may become as expert in dressing and packing turkeys as is the experienced plant operator.

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# DRESSING AND PACKING TURKEYS FOR MARKET

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## LOSSES THROUGH FAULTY METHODS

THOUSANDS OF DOLLARS are lost annually by turkey producers in the United States because of inferior quality of birds and faulty methods in dressing and packing. A producer often devotes much labor and expense to raising turkeys of fine quality and then, either through lack of knowledge or through carelessness, loses much of the profit he might have obtained by giving more attention to selecting, finishing, and preparing his turkeys for market.

## SHALL DRESSING BE DONE AT HOME?

Whether it is more profitable for a producer to dress his turkeys or to market them alive depends upon local conditions. Dressing shrinkage from loss of blood and feathers is approximately 10 per cent. (Table 1.) The additional price obtained for the dressed turkeys, therefore, should be enough to pay for this shrinkage and for the labor involved in dressing.

For example, a 15-pound turkey will shrink nearly 1½ pounds in dressing. At 20 cents a pound this would amount to a dressing loss of 30 cents, or 2 cents a pound on the live weight of the turkey. If labor is hired, or if the producer dresses his own turkeys, 15 cents a head is a reasonable charge for dressing. This adds another cent a pound to the cost, making a total of 3 cents a pound. Added to this are the risk of poor dressing, the danger of spoilage, and the greater cost of packages than of live-turkey coops.

<sup>1</sup> This bulletin was first issued as a contribution of the Bureau of Agricultural Economics. In July 1939 the author and the work on which the bulletin is based were transferred to the Agricultural Marketing Service.

On the other hand, dressed turkeys can be shipped longer distances with much less shrinkage in weight than can live turkeys, and when properly packed, the dressed turkeys can be hauled to market with less danger of bruises and abrasions. With care and practice a producer can dress his turkeys as satisfactorily as can the country packer. The increased price per pound for the dressed turkeys will usually enable a producer to obtain a larger return from his turkey flock, especially if he does the dressing himself or if it is done by members of his family.

TABLE 1.—*Loss of weight caused by dressing turkeys, completely bleeding them, and removing all feathers*

Number of turkeys in each group studied	Young hens			Young toms		
	Average weight		Percent-age shrinkage in weight	Average weight		Percent-age shrinkage in weight
	Live	Dressed		Live	Dressed	
25	Pounds 8.24	Pounds 7.37	Per cent 10.56	Pounds 13.92	Pounds 12.47	Per cent 10.42
25	9.12	8.22	9.87	16.16	14.50	10.27
25	10.15	9.18	9.56	18.2	16.44	9.67
25	11.03	9.98	9.52	20.3	18.47	9.01
Average shrinkage			9.83			9.77

#### SELECTING TURKEYS FOR MARKET

Much of the loss to a grower caused by marketing undergrade turkeys can be avoided by care in selecting the birds to be killed. Merely to kill a certain proportion of the flock for the Thanksgiving market and hold the rest for the Christmas market is a careless procedure that causes heavy losses to the producer. A turkey grower should not market his turkeys before they are ready any more than a fruit farmer should harvest his crop before it is ripe.

The only way to select the turkeys that are ready for market is to examine each bird. The first requisite of a high-grade turkey is full fleshing. To ascertain the amount of flesh on the turkey, different parts of the carcass of the bird should be thoroughly examined. The amount of flesh on the breast can easily be learned by feeling along the keel bone. The breast should be broad and the bone so covered with flesh that it does not protrude to the skin. The back, hips, and other bones of the body should also be fully covered.

Gently blowing against the feathers will make the surface of the skin plainly visible. It should appear light in color with no dark meat showing through the fatty deposit under the skin. A dark, bluish appearance is a sure sign of inadequate finishing. The first fat of a turkey appears on the back in broad layers extending from the neck to the tail. Small streaks of fat next develop over the hips; then thin narrow strips appear along both sides of the breast about midway between the wing joint and the peak of the breastbone. If the turkey is fattened enough for market, these primary streaks of fat are connected by thinner layers so that the entire carcass is fully covered.

Pinfeathers are a common cause of disqualification from the higher grades. These pinfeathers show more or less over the entire carcass but are more noticeable over the hips, along the inside of the wings, and over the abdominal region. On immature birds the pinfeathers barely protrude through the skin; it is impossible to remove them satisfactorily, so immature birds should not be chosen for killing. If the pinfeathers are an inch or so long, it is well to pull one of them out and examine it by squeezing the quill. If a dark, bloody substance is in the quill, the turkey needs more finishing; if the quill comes out practically dry, the bird is mature and will "pick clean."

If the bird is not fully developed and finished, it should not be killed, for the extra weight obtained by holding a turkey until it is matured and the extra price received for turkeys of higher grade well justify a producer in holding for later markets, even though the price per pound received at the later date should be considerably lower. As a rule, however, the January farm price for turkeys is almost as high as the December price, and the Christmas-market farm price, for the last 20 years, has averaged higher than the farm price at Thanksgiving (table 2).

TABLE 2.—*Estimated average farm price, per pound, received by producers for live turkeys in the United States, Nov. 15, Dec. 15, and Jan. 15, 1920-21 to 1939-40*

Year	Nov. 15	Dec. 15	Jan. 15	Year	Nov. 15	Dec. 15	Jan. 15
	Cents	Cents	Cents		Cents	Cents	Cents
1920-21-----	31.8	33.1	33.0	1931-32-----	18.3	19.4	18.0
1921-22-----	28.2	32.5	30.7	1932-33-----	12.9	10.9	10.2
1922-23-----	29.5	32.3	29.7	1933-34-----	11.8	11.1	11.6
1923-24-----	27.9	24.5	23.1	1934-35-----	14.6	16.0	16.0
1924-25-----	24.2	25.8	26.2	1935-36-----	19.9	21.3	19.9
1925-26-----	28.3	31.1	31.7	1936-37-----	15.0	14.3	14.1
1926-27-----	29.8	32.8	31.6	1937-38-----	17.9	18.0	17.5
1927-28-----	30.8	32.3	29.8	1938-39-----	17.1	18.4	18.3
1928-29-----	31.2	30.5	28.2	1939-40-----	-----	-----	14.2
1929-30-----	27.1	23.5	23.7	20-year average-----		22.9	23.5
1930-31-----	20.1	19.9	21.6				22.4

#### CARE IN HANDLING LIVE TURKEYS

A bruise on any part of the carcass is a cause for lowering the grade in which a turkey is placed. Turkey flesh is very easily bruised; the producer should keep this fact constantly in mind. Most of the bruises found on dressed turkeys are caused by rough handling before the turkeys were killed.

When catching turkeys the movements should be slow and cautious, in order not to excite the birds. If excited they trample each other, causing large tears and bruises. Bruises on the breast are often caused by catching a turkey by the legs and then jerking the feet from under it, throwing the turkey forward on its breast and bruising it. The right way to catch a turkey is to seize it between the middle and upper joints of the wing, on the side opposite from where one is standing (fig. 1). The thumb should be between the wing and the body of the bird and the fingers should be closed around the wing on the underside. A turkey held in this way will not bruise itself by flapping its wings, and is easily handled. The

flesh around the bone of the wing should not be twisted or held too tightly, for either action may cause discoloration.

If it is impossible to handle a turkey by the wing, both feet should be seized at one time and the turkey lifted in such a way that the breast will not strike the ground. The legs should be caught below the knees, as a firm grip of the hand will bruise and discolor the fleshy part of the leg. The wire hooks sometimes used in catching turkeys are likely to bruise the legs and other parts of the body, as there is no way to control wing flapping until the turkey can be held with the hand.



FIGURE 1.—The way to hold a turkey to prevent flapping. Many turkeys that would otherwise be of high grade are placed in lower grades because of bruises

eat the evening before they are killed. If grain is given some of it may remain in the crops the following morning. As the soft feed is digested rather quickly the crops and entrails will probably be empty enough so that killing may start 10 or 12 hours after feeding. Before the killing is begun, however, the crops of the live turkeys should be examined by feeling each one to make sure that no feed remains in them. Water should be within reach of the turkeys constantly until the time of slaughter. When the flock is so large that

A chute so constructed that the turkeys can be driven into it and then caught without trampling on each other is desirable on any turkey farm.

#### FEEDING BEFORE KILLING

The question of the quantity of feed to be given turkeys immediately before they are killed is of great importance to a producer. If the crop contains feed after the turkey is killed, the entire crop must be removed or the grade of the turkey will be lowered. On the other hand, a bird starved too long before it is killed loses considerable weight.

A good plan is to feed the turkeys all the soft mash they will

some dressing in the afternoon will be necessary, the turkeys should be separated and those intended for afternoon slaughter may be given a light feed of soft mash very early in the morning.

#### EQUIPMENT FOR DRESSING

A properly equipped turkey farm requires a considerable financial investment, yet enthusiastic producers, when starting a turkey farm, will spend the necessary amount to care for rearing the stock and then fail to provide the right facilities for dressing. There is no excuse for using poor equipment or homemade tools when the producer can buy complete dressing equipment for less than \$2 and the equipment can be used for several seasons.

A complete set of dressing tools for farm use consists of a sticking knife, a blood cup, a picking shackle, a pinning knife, and a needle for sewing torn skin. (Fig. 2.)

The sticking knife is the most important piece of the equipment. (Fig. 2, A.) Care should be used in buying it, as most knives sold by the produce-supply houses are designed for killing chickens and are not suitable for turkeys. A sticking knife for turkeys should have a thin, narrow blade at least 4 inches long, and a 5-inch handle. The blade should be made of the best quality steel so that it will retain its sharp cutting edge, and it should be thick enough not to bend. The cutting edge should be straight to the point, and the back of the blade should taper gradually to meet the sharpened edge. The blade should preferably be sharpened only 2 inches from the point.

Blood cups for turkeys should be 8 inches high and 4½ inches in top diameter. (Fig. 2, D.) The hook at the top should be so sharp that it will easily penetrate the tough skin of the head and neck. When buying a blood cup the weight should be given special consideration. If the cup is too light, it will not hold the head down; the turkey will swallow some of the blood, causing a discolored crop. If the cup is too heavy, the veins of the neck will be so stretched as to interfere with the flow of blood. For medium-sized turkeys the cup should be leaded to weigh from 3 to 4 pounds.

The picking shackle should be made of one-fourth-inch wire sufficiently strong to hold the feet in place while the turkey is flapping. (Fig. 2, B.) It should be so constructed that there will be a spread of at least 6 inches between the legs of the turkey, so that the feathers between the legs can easily be removed.

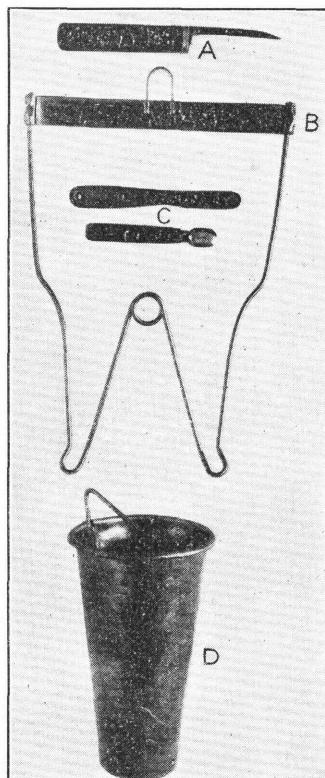


FIGURE 2.—Good equipment is necessary to a good job in dressing. Sticking knife (A), shackle (B), pinning knife (C), and blood cup (D) should be provided

Various types of pinning knives, for use in removing the pinfeathers, are on the market, and choice of one is chiefly a matter of individual preference. The two types shown in Figure 2, C, have proved satisfactory. The blade of the knife should be dull, so as not to cut the skin or the feathers of the turkey, and the handle should be so made that it will not cramp the hand. A hole in the end of the handle through which a string can be run and the knife hung around the neck when not in use is a great convenience to the picker. The blade of the knife should not be over  $2\frac{1}{2}$  inches long.

A curved surgeon's needle is suitable for sewing torn skins. A No. 4 or No. 5 needle, depending on the size of the tear, will be satisfactory. The thread should preferably be of white silk, but No. 40 white cotton can be used. In case a surgeon's needle is not available, an ordinary sewing needle of medium size will serve the purpose.

#### HOW TO BLEED AND KILL TURKEYS

Bleeding and killing are simple operations. Any operator should be able to do them satisfactorily with a little practice. Bleeding and braining should both be done through the mouth. In bleeding, the operator should keep in mind the location of the veins in the neck.

Two large veins run on either side of the neck, with a cross vein connecting them at the base of the skull, and form an outline somewhat like the letter H. The correct cut is one that will sever the main vein on the left side of the neck and, at the same time, the connecting vein. (Fig. 3.) In braining, the operator should keep in mind the exact portion of the brain to be pierced.

The turkey should be securely fastened in the shackle and hung so that the wings are on a level with the operator's elbows. The shackle should be hung far enough from the wall so that the turkey will not wings. There is less likelihood of breakage if the wings are not locked. It is well to proceed slowly.

The inexperienced operator is likely to excite both himself and the turkey; this prevents a good job.

Hold the handle of the knife loosely in the fingers and not in the palm of the hand. Grasp the head of the turkey by the bony part, and hold it firmly in the fingers of the left hand with the palm as far away from the head as possible so the operator will not be injured if the knife pierces through the head. With the thumb and forefinger press firmly on both sides of the turkey's head at the junction of the upper and lower beaks. This will cause the mouth to open so the knife can easily be inserted. (Fig. 4 A.) Hold the knife with the sharpened edge downward and insert it so the point will be at the

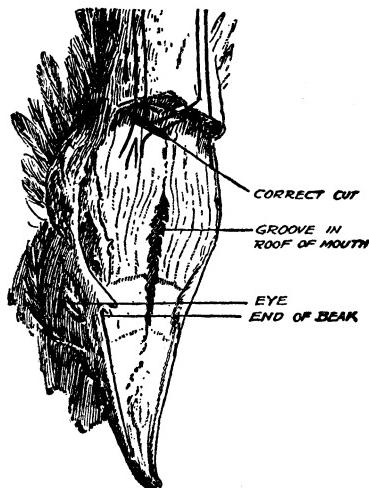


FIGURE 3.—The large vein and the cross vein should both be cut, and at the same time, to insure good bleeding

base of the skull to the left of the operator. With a quick, light cut, press the point of the knife into the flesh, lifting the handle upward and cutting downward and to the right. The cut will be made with only the point of the knife. When the veins are properly severed in this way a heavy flow of blood immediately takes place; if this work is not correctly done, further cuts should be made until free bleeding is accomplished. Still holding the head with the left hand, insert the knife blade through the cleft in the roof of the mouth, sharp edge up (fig. 4, B), and thrust through into the base of the brain. The knife point should penetrate the back lobe of the brain (medulla oblongata) just below the eye. That part of the brain controls the feather muscles; when it is pierced the muscles relax and this loosens the feathers.

If the brain is correctly penetrated, the turkey gives a characteristic squawk, the tail feathers spread, and a sharp convulsion of the body takes place. The feathers can then be easily pulled. If the brain has not been properly pierced, another attempt should be made.

If the turkey is very large or the knife blade is too small, in some instances not enough brain tissue will be destroyed to loosen the feathers if the usual method is followed. In such case the knife blade should be given a twist after the brain is reached; but this should be done with care, for if too much brain tissue is destroyed, heart action will stop, the bird will cease bleeding, and the flesh will harden and "set" the feathers.

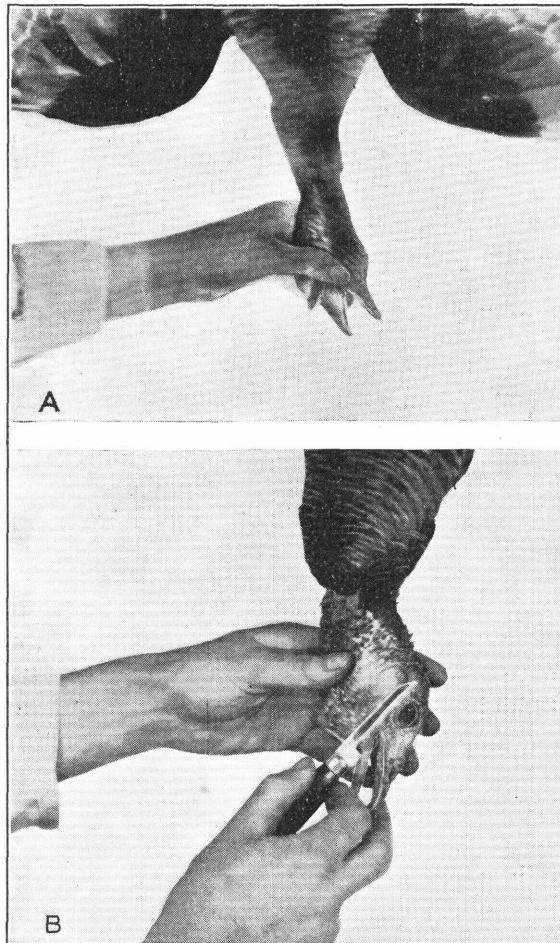


FIGURE 4.—A. Holding the mouth open preparatory to sticking. The knife blade must be correctly inserted to insure good bleeding. B. The direction the point of the knife should take to pierce the brain. Unless the brain is correctly pierced it will be difficult to remove the feathers.

Still holding the head downward with the left hand, fasten the blood cup at the base of the lower beak in such a way that the mouth will be held open. Do not relax the hold on the head until the blood cup is fastened, or the turkey is likely to raise its head and swallow some of the blood, causing a discoloration in the crop. Hold the turkey by the side of the head and not by the neck, for the pressure of the hand would close the veins and prevent good bleeding. As soon as the cup is fastened, begin picking.

#### HOW TO PICK TURKEYS

Hold the wings of the turkey back to back, with the left hand close to the body of the bird. Grasp the large tail feathers with the right hand, thumb down, and then turn the wrist and twist out the feathers as the fist turns upward. A single twist of the wrist should remove all the large tail feathers. (Fig. 5, A.)

The large wing feathers are next removed. The feathers of both wings may be grasped at the same time, thumb upward. (Fig. 5, B.) Jerk them out with a quick downward movement, using considerable force as they are harder to pull than the tail feathers. It may be necessary to take a second or third handful as it is difficult to grasp all the large feathers at one time, especially on large birds.

The breast and side feathers are removed next, beginning at the wishbone and working toward the legs. Seize the feathers with the whole hand, twisting the hand outward and in the direction of the slant of the feathers. A straight pull is likely to tear the skin. Work up to the thighs, twisting the feathers in each handful. (Fig. 5, C.) Finish one side of the turkey up to the leg, and then pick the opposite side before beginning on the legs.

In picking the leg, clasp it firmly at its base, thumb upward. Move the closed hand along, pressing just enough to strip the feathers. (Fig. 5, D.) Work in the direction of the feather setting, and strip only once. Do not wet the hands or clasp the leg too tightly, as either will injure the skin of the turkey. Pull any feathers left after the first stripping, for there are not enough feathers left to protect the skin from injury by the hand if the stripping were continued.

The operator is now ready for the back and hip feathers. He should grasp as many feathers in the hand as possible, and with a twisting motion rotate the forearm inward. Continue until the larger feathers are removed; then with thumb and forefinger pull out the small feathers between the shoulders. (Fig. 5, E.)

The neck comes next. Pick it by pulling against the slant of the feathers. (Fig. 5, F.) There is less danger of tearing the skin on the neck than on other parts of the carcass, but too many feathers should not be grasped at one time. Do not pick the neck or hip feathers until the bird is practically through bleeding or red blood marks will show on the skin.

The soft body feathers between the legs come next. They are easily removed if the picking shackle spreads the legs far enough apart.

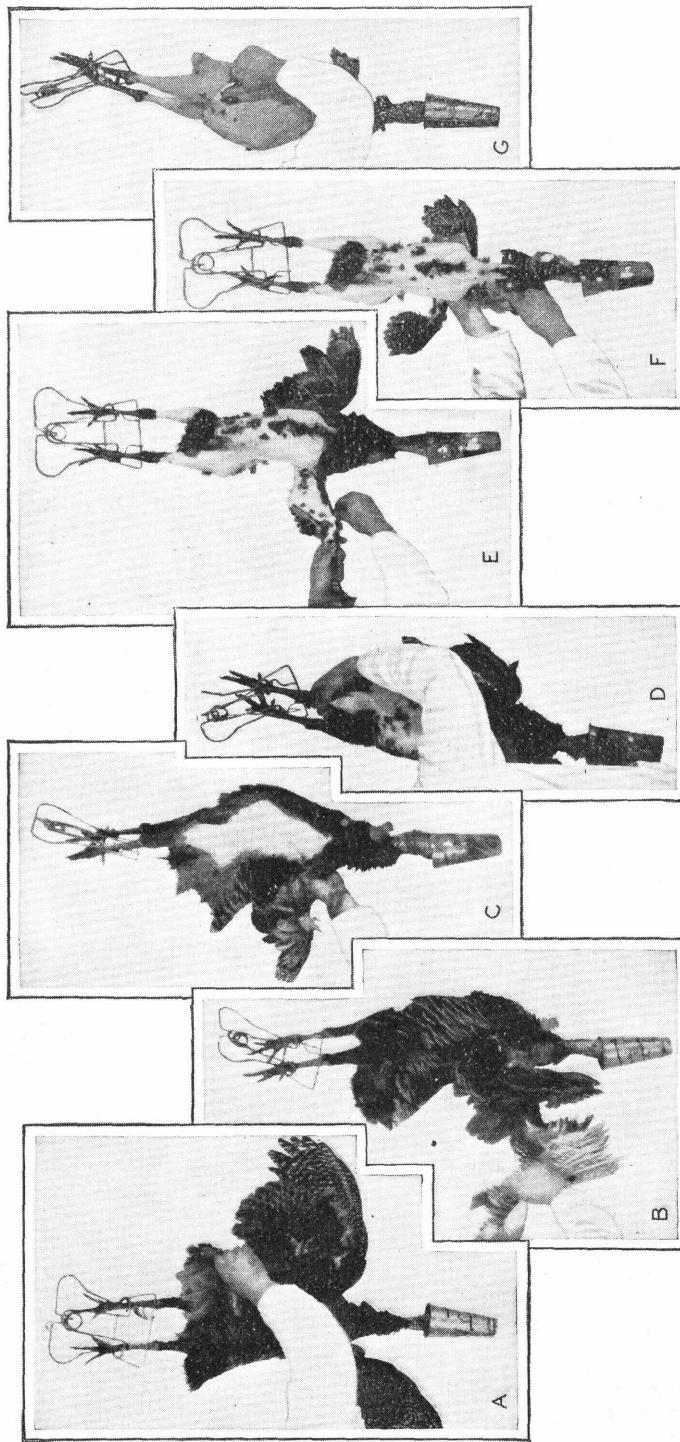


FIGURE 5.—A. In the picking operation the tail feathers are removed first. They should be twisted as pulling them straight out is likely to tear the skin. B. The wing feathers may be pulled from both wings at one time, or each wing may be picked separately. C. Ready for the third step in picking. The feathers from one side have been removed and the operator is ready to begin on the opposite side. D. The fourth step is to remove the feathers from the legs. The legs should be stripped only once or the skin will be blistered. E. Removing the feathers from the back, hips, and wings. The smaller feathers are picked with the thumb and forefinger. F. Removing the neck feathers. The skin of the neck is tough and the feathers can be removed by picking downward against the slant of the setting. G. The last operation in picking. The pinfeathers can be easily removed when dashed between the thumb and pinning blade.

The small wing feathers come last. Stretch out the wing with the left hand and pick the medium-sized feathers on the outside. Pick only in small bunches, as the skin here is easily torn. The feathers from the inside of the wing are picked next; pull against the feather setting, using the thumb and forefinger. Pull the stiff feathers and fans one at a time by bending sharply downward and jerking quickly.

Too much time should not be given to removing the pinfeathers the first time over the carcass, as it is more important that the large feathers be picked as soon as possible after killing. The "roughing" job is usually done by the killer and the "pinning" job by less experienced help. In going over the turkey the second time (pinning) the pinning knife (fig. 5, G) should be used, as it is practically impossible to remove the small pinfeathers without some such device.

In some parts of the country the usual trade practice is to allow a single row of feathers, or fan, on each wing, and to allow a few feathers on the neck and around the knees. These serve no useful purpose, are insanitary, and must be pulled out before the turkey is cooked. It is therefore recommended that the feathers from the entire carcass be removed, with the possible exception of a single row of fan feathers on the wing tip.

#### HOW TO CLEAN THE CARCASS

By the time the pinner finishes removing the feathers the turkey has stopped bleeding and the carcass is ready to be cleaned. The

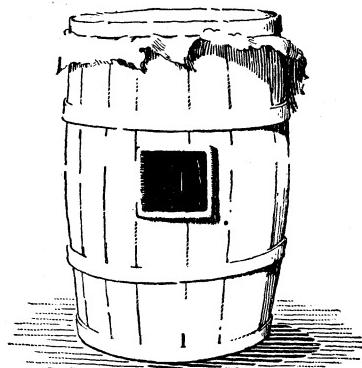
first and most important part of the cleaning is to squeeze out the feces from the lower intestines. This is best done by pressing on the abdomen with the thumb just below the keel bone and moving the thumb toward the vent. The tail should be held back by the forefinger. The vent should then be sponged and any dirt or blood on any part of the carcass should be removed with the sponge.

A blood clot always forms in the mouth; this should be removed by "snapping" the head or by striking it sharply against some solid object. The head should strike the object near the base of the skull so as to permit the blood to fly out. This blood will usually scatter over the

FIGURE 6.—A convenient arrangement for use in removing blood from the head. The turkey is swung by the feet so that the head strikes the edge of the opening, dislodging the blood, which falls into the barrel.

whole dressing room and is objectionable from a sanitary standpoint. A device such as shown in Figure 6 has proved satisfactory in avoiding this.

This simple device consists of a barrel with an opening, about 9 by 12 inches, in the side; usually the width of two wide staves sawed from the bilge will be sufficient. A burlap bag or other covering should be drawn over the top of the barrel. The edges around the opening should be covered, to protect the skin of the



turkey from tears or bruises when it comes in contact with the barrel. Three or four thicknesses of burlap or a strip of rubber from the inner tube of an automobile tire will answer this purpose.

Hold the turkey by the feet and swing it so that the head will strike sharply against the edge of the opening in the barrel. The jar will cause the blood clot to loosen and fall from the mouth. The blood will be caught in the barrel and will not scatter over the room. After the head has been snapped, the mouth should be sponged, or wiped out with a cloth.

The turkey's feet are always dirty; if not cleaned they will soil the flesh of any birds packed in contact with them, therefore they must be washed. A tub of water (preferably warm) and a scrub brush are used. The operator usually sits on a stool near the tub. The turkey should rest on the left leg of the operator, breast down, and should be supported by the left elbow holding the carcass on the knee of the operator and against his body. In most cases three or four strokes of the brush across the bottoms of the feet will remove the dirt. The feet should then be wiped dry to prevent the dirty water from running down over the legs of the turkey when it is hung up to cool.

#### HOW TO WRAP HEADS

A good quality of waterproof paper should be used for wrapping heads. Brown, parchmentized, kraft paper, waxed on one side, is probably the best for this use. Blood does not show through brown paper as much as through paper of a lighter color, and the waxed surface prevents the blood from soaking through. The paper should be heavy, 40 pounds to the ream, and so cut that the waxed surface will be inside, next to the head, when the wrapper is put on. Newspapers or paper sacks are not satisfactory as head wrappers because they are seldom bloodproof and are hard to keep in place.

Poultry head wrappers come in various sizes. The one most commonly used for hen and small tom turkeys is 7 by 7 by 10 by 14 inches; for large turkeys, 9 by 9 by 12 $\frac{3}{4}$  by 18 inches. These wrappers can be bought, cut to order, from almost any paper-supply house or from dealers in poultry and packing-house equipment. They can usually be bought even in small quantities and of good quality, at about 10 cents a hundred. Head wrappers of the usual size weigh from 5 to 12 pounds a thousand, depending on quality and finish. (Table 3.)

TABLE 3.—Weight of parchment head wrappers

Weight and finish of stock	Weight per 1,000 wrappers	
	Small size, 7 by 7 by 10 by 14 inches	Large size, 9 by 9 by 12 $\frac{3}{4}$ by 18 inches
30-pound:		
Unwaxed.....	5.10	8.44
Waxed.....	5.78	9.57
35-pound:		
Unwaxed.....	5.95	9.84
Waxed.....	6.64	10.97
40-pound:		
Unwaxed.....	6.80	11.25
Waxed.....	7.48	12.38

Generally it does not pay a producer or packer to make head wrappers if those of good quality can be bought. A packer should use a uniform wrapper for all his turkeys, and all members of a turkey pool should use uniform wrappers—of the same quality, color, and finish. This makes a package more attractive and is usually well worth the small cost. By pooling their orders for wrappers, a group of independent producers or members of turkey pools can assure themselves of uniformity and usually can get a reduction in price.

With a little care, producers can soon learn to wrap the heads correctly. Too often the appearance of a nicely dressed lot of turkeys is spoiled because the carcasses are smeared with dirt and blood through carelessness or through inadequate head wrapping.

If it is possible to arrange the turkeys in the cooling room so that the blood from those on the top row will not drip on those underneath, it is better not to wrap the heads until the animal heat has been properly reduced and the blood has stopped dripping. If there is not enough space in the cooling room for such an arrangement, the heads should be wrapped before the turkeys go into that room.

An experienced operator can wrap several heads per minute. In wrapping the head allow the turkey to hang on the cooling rack, head down. With the left hand hold the wrapper alongside the back of the neck, long side up, so that the bottom of the wrapper will come at least 3 inches below the beak. A corner of the wrapper is held with the thumb of the left hand, with the edge pointed toward the opposite corner. (Fig. 7, A.) Keep the wrapper stretched tight.

With the right hand grasp the upper right-hand corner of the wrapper and pull the paper forward around the head of the turkey. Wind the paper tightly around the neck as far as it will go, the thumb of the left hand still holding tightly to the upper left-hand corner of the wrapper. (Fig. 7, B.) The wrapper now has the form of a bell or cone, large end at the bottom. (Fig. 7, C.)

With the fingers of the right hand tuck the edge of the wrapper up along the side of the head, tucking from the bottom first. With the thumb tuck the opposite side, or turn the head around and tuck the opposite side with the fingers, as in the first operation. (Fig. 7, D.)

The wrapping operation is now completed and, if it has been properly done, the wrapper fits tightly to the head and the turkey can be handled and boxed without danger of the wrapper coming loose. The wrapper should be drawn so tightly around the neck that the skin protrudes over the edge of the wrapper. (Fig. 7, E.)

#### HOW TO SEW TORN SKIN

It is well, of course, to dress the turkey so carefully that there will be no need for thread and needle, but when accidental tears do occur it is better to sew them up and protect the flesh underneath than to leave them open and susceptible to bacterial infection.

Knot the thread as in sewing any other material, using a double thread. Insert the needle near the opening of the cut and just above it. Draw the thread through, to within an inch of the knot; then slip

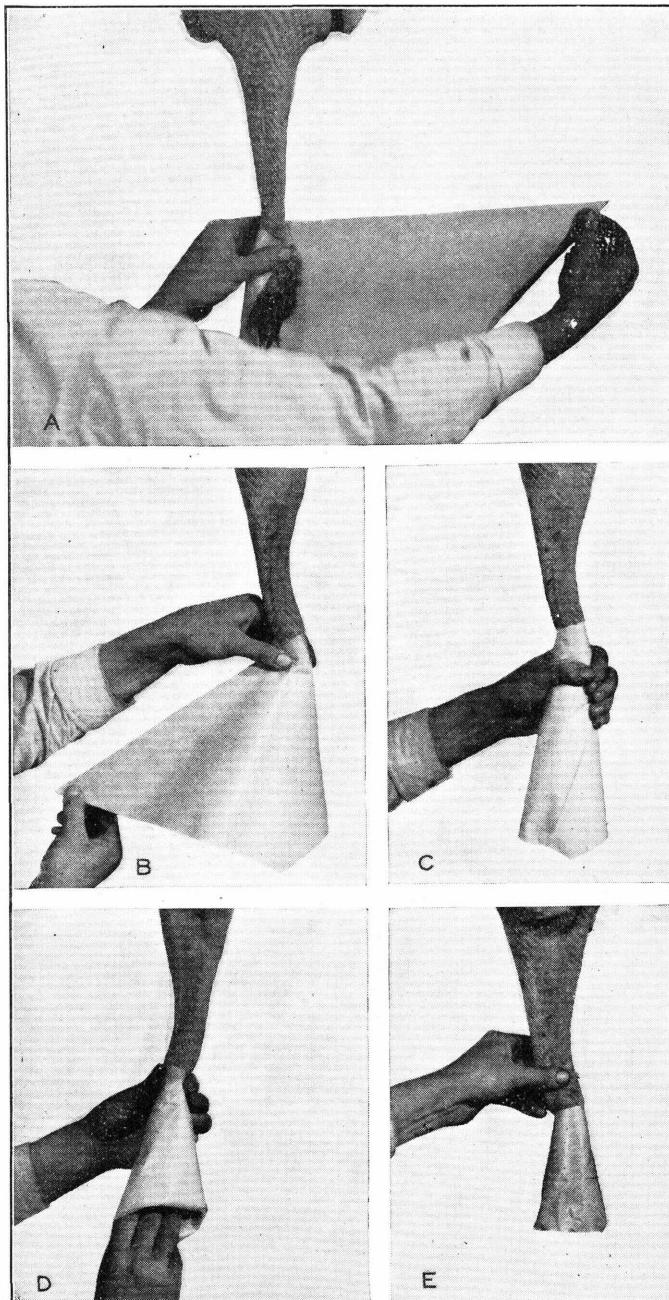


FIGURE 7.—A. Beginning the wrap. Always keep the wrapper stretched tight. B. The second stage; the long end of the paper is directly opposite where it was in the beginning. C. The third stage; the whole length of the paper has been used twice in encircling the head. D. The fourth stage; the paper is tucked tightly between the head and the opposite side of the wrapper. E. The completed head wrapper. If it is properly put on it will be impossible to remove the wrapper without tearing it.

the needle back between the threads that were not drawn through, and pull tight. This holds the thread fast and prevents the knot from slipping through the skin. Using an overlap stitch, continue the length of the tear, drawing the two edges of the torn skin

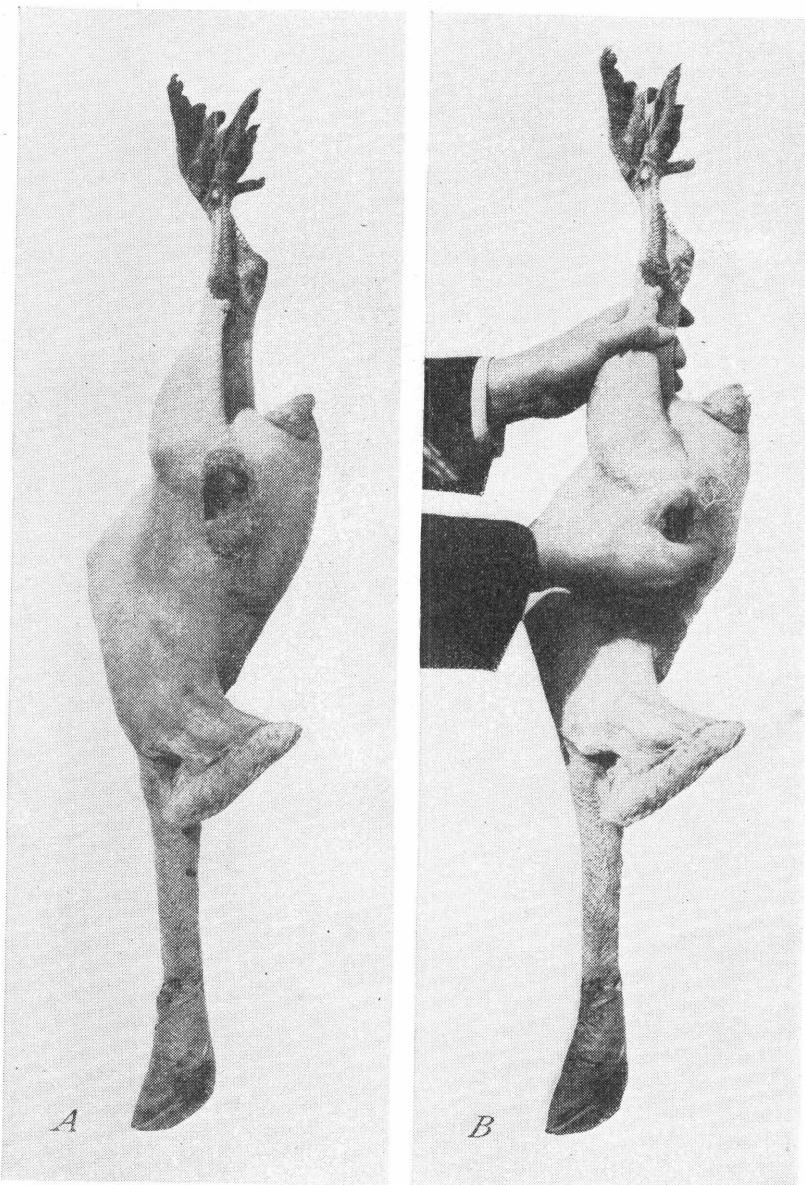


FIGURE 8.—A badly torn skin: (A) Before being sewed and (B) being sewed. The sewing is simple and, with a little practice, can be done quickly.

snugly together. When the sewing is completed draw the needle between the skin and the loop of the last stitch. Draw tightly and cut the thread about one-half inch from the knot. If properly sewed,

the cut will hardly be noticeable. Although it is not desirable to have this thread in the skin of the turkey, the protection to the meat more than offsets the disadvantages of sewing and well justifies the effort. (Fig. 8.)

#### HOW TO REMOVE CROPS

It is of primary importance that all turkey crops be free of feed, not only because of unfair trade practice in selling worthless material but because of the great danger of spoilage caused by the feed. Fermentation sets in very soon after the turkey is killed, especially if the crop contents are bran and other soft-grain feeds. The contents quickly sour and form gas, give off an offensive odor, and cause the skin over the crop to turn dark. Unless the turkey is drawn

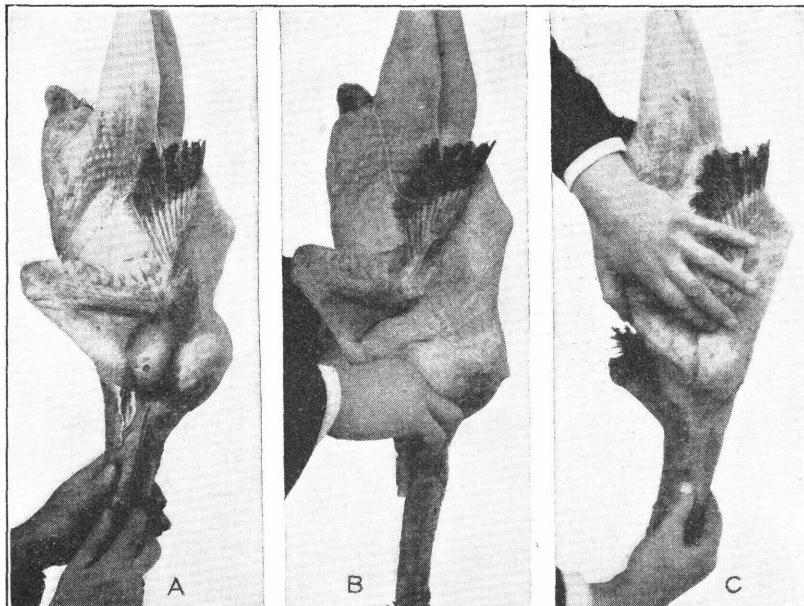


FIGURE 9.—A, The skin of the neck as cut to remove the crop; B, the crop will come out readily if removed while still warm; C, the same turkey shown in A and B. The crop has been removed and the incision sewed; thus the meat is protected from drying out and from dirt and contamination.

immediately, the flesh around the crop is likely to become contaminated and the meat of the turkey to have a sourish taste. If it is necessary to kill turkeys that have full crops, the crops should be removed immediately, while the birds are still warm, and the incisions should be sewed up.

Some packers remove the feed by puncturing the crop with a knife and then squeezing out the feed. Such a practice is to be severely condemned, for it is impossible to remove all the feed by it, and the remaining feed turns sour and runs out, thus soiling the turkeys when they are hung by the feet. The skin dries out over the region of the crop, and this gives the turkey an unsightly appearance.

To remove the crop properly, the skin should be cut along the neck behind the wing of the bird so that the incision will not show

from the front. The cut should be from 2 to 3 inches long, depending upon the size of the crop. (Fig. 9, A.) Care should be taken not to cut into the crop. Then the first two fingers are run through the opening to loosen the connective tissue around the crop. (Fig. 9, B.) The fingers should completely encircle the crop to prevent it from tearing, and the entire crop can be removed with a slow pull. The gullet should be pulled out and cut off as far away from the crop as possible. Any dirt or blood left around the opening should be carefully sponged off.

The incision is next sewed up by the same procedure as in sewing torn skin. (Fig. 9, C.)

#### PRECOOLING

It is very necessary that all the animal heat be removed from the turkeys before they are packed. If this is not done severe losses from spoilage will occur. Producers who must depend on the weather for cooling the birds may have difficulty when the temperature is above the freezing point. Every packer of turkeys should have a thermometer with which to determine the temperature before packing.

After the turkeys are cleaned they should be hung by their feet, so that any blood remaining in the mouths will drip out. This is perhaps the most satisfactory position for cooling, although hanging a bird while it is still warm has a tendency to stretch the frame and give it a somewhat poorly fleshed appearance. To avoid this, some packers, especially if they expect to pack the turkeys in barrels, lay the birds on racks, breast up, and allow the heads to hang down over the sides of the racks. Suitable racks can be made of 1-inch boards, 8 feet long and 14 inches wide, supported on legs that are 2 by 14 inches and 10 inches high. The racks can be placed one on top of the other to any desired height. If refrigerator cars are used for precooling, racks of this size will just fit crosswise of the car. The disadvantage in the rack method of cooling is that the turkeys do not cool so quickly as when hanging, and there is more likelihood of skin discoloration at the points where the turkey rests on the rack.

The turkeys should be cooled indoors. They should never be allowed to hang in the wind, as this dries out the skin and causes undue shrinkage.

Where mechanical refrigeration is available, the room temperature should be near the freezing point. At least 24 hours of such temperature is needed to reduce the body temperature sufficiently before packing; in some cases as much as 36 hours is required. The internal temperature of the turkeys should be at least 34° F. to avoid all danger of spoilage. The temperature is determined by inserting the thermometer through the vent and up the intestines to about the center of the carcass, leaving it there a few minutes before it is withdrawn so that the mercury will register. The temperature of the largest turkeys and those nearest the door or on the top rows should be taken. If these turkeys have been sufficiently cooled, it is safe to assume that the temperature of the others is low enough to permit packing.

The use of refrigerator cars as precooling rooms has proved satisfactory where other mechanical refrigeration is not available. The

cars are usually iced to full capacity, and 10 per cent by weight of salt is added to reduce the temperature still further. The car should be iced for at least 12 hours before the turkeys are put in. In most cases the temperature of the car by this time will be below freezing, but the heat of the turkeys warms the air so much that there is little danger that the carcasses will freeze too rapidly.

The turkeys may be placed on racks in the car or hung by their feet in much the same way as in the refrigerator room. Two-by-four supports are usually fastened crosswise in the car, and the turkeys are suspended from them. (Fig. 10.) The lower row should be hung first, high enough to bring the heads just a few inches above the floor rack. The second row is then hung so that the heads will come slightly below the feet of the turkeys underneath. Three rows usually fill the space between the floor racks and the roof.

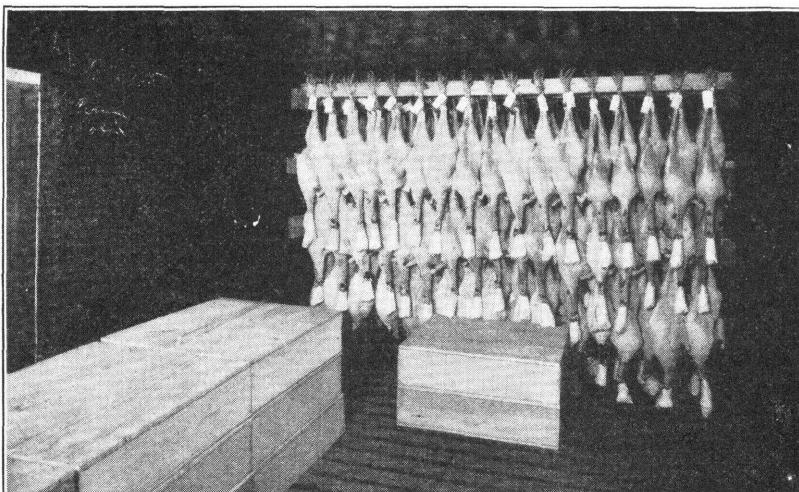


FIGURE 10.—Interior of a refrigerator car used for precooling. When the load is well braced the turkeys may be shipped to near-by markets without being boxed

Carcasses properly hung and braced can be shipped a considerable distance without damage, and the shipper may be able to send such carcasses to be packed at a packing plant that has cooler space.

If the turkeys are boxed before they are shipped, the boxing should be done inside the car; if there is not enough room in one car a second car should be used. Under no conditions should the turkeys be taken from a precooling car and then packed in warm air.

#### SAVING THE FEATHERS

In communities in which the live turkeys are brought to a central dressing plant or in which packers dress a considerable number of turkeys each season there is often an opportunity to sell the feathers. White feathers are always in best demand and bring the highest prices.

Individual producers who pick their own turkeys with a little extra care can sometimes market the feathers at a small profit. The

great difficulty for individual producers is to obtain enough volume to ship by freight, as the extra cost of express shipments will usually absorb the profit if the distance to market is great.

The different kinds of feathers—body, wing, and tail feathers—must be kept separate and must be thoroughly dried before being shipped, or they are likely to mold and mat together, and thus be unsalable. Before being bagged the feathers should be placed loose in a dry room and turned or "forked" every two or three days until all moisture disappears.

The tail feathers should be packed separate from the rest, and only the long ones used. The short tail feathers are of small value and, if shipped at all, should be packed by themselves. The large quill feathers on the two joints of the wing next to the body usually bring a good price; they should be separated from the tail quills. As the quills growing on the tip of the wing are fleeced on only one side, they are seldom worth saving.

The body feathers are packed in burlap bags. They are pressed tightly together and the tops of the bags are securely tied or, better, are sewed with darning needle and ordinary cord string. The quills should be packed in lightweight boxes or in burlap bags. They should be laid straight in the package, all quills pointing in one direction. If stuffed indiscriminately into the bags the quills are broken and their value reduced if not lost.

The price of feathers is subject to considerable market fluctuation. It is well, therefore, for a producer or packer to consult feather buyers before going to the labor and expense of saving and shipping the feathers, and to use his own judgment as to whether the work is likely to be profitable under the circumstances. The following tabulation, arranged in order of market value of the feathers, will serve to guide the producer as to how they should be assorted or classed:

Body—all white, full-fleeced, dry-picked.

Tail—all colors, straight and clean, no shorts.

Wing—all colors.

Tail, wing, pointers, and shorts, mixed.

Body, colored, full-fleeced, dry-picked, and pointers.

#### HAULING TO MARKET

If a producer dresses his own turkeys, he should get them to the dealer or packing station just as soon as they are sufficiently cooled. If the weather prevents precooling on the farm, the carcasses should at least cool overnight and then be delivered to the station early in the morning, while the atmospheric temperature is still low. Turkeys should not be hauled immediately after being picked, as the warm skin is very tender and is easily scuffed or broken.

It is better to pack the turkeys loosely in a wagon or truck, rather than to put them in barrels or boxes and then rehandle them at the packing plant. A layer of clean, dry straw, about a foot thick, should be placed in the bottom of the truck and a layer of turkeys carefully placed on top, breast up. Additional layers of turkeys can be placed above the bottom layer. If carefully handled and packed, the turkeys can be stacked three or four layers high without much damage. The load should not be packed much higher than this, as too much weight on the lower layer of turkeys will cause considerable damage. A producer can well afford to make

an additional trip to the station rather than injure his turkeys and cause them to be reduced in grade. A piece of canvas or some form of covering should be stretched over the top of the load to protect the turkeys from the sun and from dirt.

#### GRADING

Grading should be done as the turkeys are received from the producer, or if the birds are dressed at the packing plant they should be graded as soon as they are sufficiently precooled. In ordinary commercial channels three grades of edible turkeys are sufficient to meet most requirements. Turkeys should be graded not only as to quality but also as to color and size. A 2-pound variation in weight of turkeys packed together is as much variation as is desirable, and a 3-pound variation is the widest that should be used, except in a shipment of old toms.

Many good lots of turkeys lose much of their sale value through careless grading. Discussion of grading requires so much detail that it can not be given in the space available in this bulletin. For a description of the United States standards and a discussion of grading turkeys according to these standards see the mimeographed statement Tentative United States Standards and Grades for Dressed Turkeys. As long as the supply lasts, copies may be obtained from the United States Department of Agriculture.

#### WEIGHING AND SHRINKAGE

After the turkeys have been graded into separate lots they are ready to be weighed. The empty box to be used for packing, containing the paper linings and box cover, should be weighed first and this total tare weight, as it is called, should be marked or stenciled on the box. After the turkeys are packed and the cover is nailed the box should again be weighed and the gross, tare, and net weights stenciled on the box.

The scales should be carefully tested each day to see that they are properly balanced, and the empty box and the packed box should be weighed on the same scales. Careful weighing of the turkeys is very important; if weighing is improperly done, disputes and errors are likely. There is sure to be some natural shrinkage through absorption of moisture from the carcasses by the atmosphere and the wooden container. If the weights are too high in the beginning, they will show up as badly in error by the time the shipment reaches market. If the tare weight at time of shipping is a unit and a fraction of a pound, the next higher unit should be marked as tare. For example, if the tare is  $17\frac{1}{2}$  pounds, it should be marked as 18 pounds. On the other hand, if the net weight is a unit and a fraction, the fraction should be disregarded and only the unit stenciled on the box; for example, if the net weight is  $187\frac{1}{2}$  pounds, the box should be marked 187 pounds, net.

In commercial practice the tendency is to accept a slight shrinkage, say, about one-half of 1 per cent, or a 1-pound shrinkage on a 200-pound box of turkeys. Careful weighing and stenciling at the packing plant is necessary in order to keep within this small margin.

## BOXES AND BARRELS

Boxes are recommended for packing, in preference to barrels. The possible exception is in the packing of heavy old toms. The turkeys carry to market in better condition when packed in boxes, as the "sweating" induced by close contact in barrel packing is likely to discolor the skin, especially if the barrels are permitted to stand for some time after the turkeys are packed, or if the temperature is not kept near the freezing point continuously. In box packing the air has freer circulation around the turkey, so that they usually reach market with drier skin. Moreover, it is much easier for the cold air of refrigeration to penetrate the boxes than the barrels.

Two types of boxes are in use—the single-layer box and the double-layer. There are so many advantages in the use of the single-layer boxes that they are rapidly replacing the double-layer type in most markets. The main advantage is that carcasses in single-layer boxes can be chilled more quickly and less spoilage is likely to occur. Then there is less skin discoloration if turkeys are packed singly than if one bird rests on another. The single-layer box permits easier inspection, as the entire contents can be examined on the removal of the cover.

There are, however, some minor advantages in barrel packing. In most parts of the country barrels can be obtained more cheaply than boxes, capacity considered. They are more easily handled and can be packed more quickly, saving both time and labor. But the principal consideration is the condition of the product when it reaches the market. The advantages of the box container in this respect more than offset those of the barrel, particularly if a fine pack of turkeys is to be put up. If barrels are used, they should be new and free from any odors that might be absorbed by the turkeys.

The most suitable box material depends to some extent upon local conditions. If certain suitable kinds of timber are grown near by, a packer will usually find it to his advantage to buy boxes locally, for he can get them on short notice and save transportation charges. Any strong lightweight wood, free of odors, will answer the purpose. Cottonwood, spruce, or white fir are most commonly used. Ordinary pine lumber is not desirable, as turkey meat packed in pine may acquire from it a disagreeable flavor.

It is convenient and economical to use only two or three sizes of boxes, suiting the number of birds to the size of the box. In this way, for example, a box of the same size can be used for packing 8 heavy young toms, 10 medium-sized, or 12 small ones. Each turkey may be packed on its side, slanted, or breast up. The breast-up method is coming more and more into favor and has proved very satisfactory. In Table 4 are given four box sizes that have been successfully adopted by some packers. There are many advantages in these sizes, but the boxes are so large that handling them is difficult and the strain from the heavy weight they contain is likely to cause them to bulge or break.

TABLE 4.—*Dimensions of boxes for packing turkeys, single layer, breast up, and side pack*

## BOXES FOR 10 TO 12 TURKEYS

Weight of birds (pounds)	Inside measurements			Thickness of lumber	
	Length <i>Inches</i>	Width <i>Inches</i>	Depth <i>Inches</i>	Ends <i>Inch</i>	Top, bottom, and sides <i>Inch</i>
Under 9	30	18	7	$\frac{7}{8}$	$\frac{1}{2}$
9-12	30	19	$7\frac{1}{2}$	$\frac{7}{8}$	$\frac{1}{2}$
12-15	32	20	8	$\frac{7}{8}$	$\frac{1}{2}$
15 and over	32	21	$8\frac{1}{2}$	$\frac{7}{8}$	$\frac{1}{2}$

## BOXES FOR 6 TO 8 TURKEYS

Under 9	25	18	$6\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{16}$
9-12	26	19	7	$\frac{3}{4}$	$\frac{7}{16}$
12-15	27	20	$7\frac{1}{2}$	$\frac{7}{8}$	$\frac{1}{2}$
15 and over	28	21	8	$\frac{7}{8}$	$\frac{1}{2}$

Both hens and toms may be packed in boxes of these sizes, the hens and small toms being packed breast up and the heavy toms being either slanted or side packed.

A box smaller than any of these is increasingly in demand. There are many advantages in having 6 or 8 turkeys packed in the box rather than 12 or 14. With the smaller number, dealers can buy more assortments in sizes without "breaking" the boxes, and the smaller sizes carry better to market and are more easily handled. Table 4 also gives the dimensions for smaller boxes suitable for packing a smaller number of turkeys.

The depth of the boxes for 6 to 8 turkeys is one-half inch less than that of boxes for 10 to 12 turkeys. This necessitates the packing of some of the larger turkeys slightly on the side, or slanted so that the peak of the breastbone rests on the side of the adjacent turkey. Six or eight hen or tom turkeys can be packed in the smaller boxes or, if the birds are very small, as many as 10 can be packed in a box.

Cleated box covers should be used on all boxes, regardless of type or size. (Fig. 11.) Uncleated box covers are easily split; it is almost impossible to remove them without breaking; and after the boxes are once opened for inspection, the covers are so damaged that the appearance of the whole box is spoiled. Cleats hold the boards of the lid together and facilitate more rapid refrigeration by making an air space between the boxes.

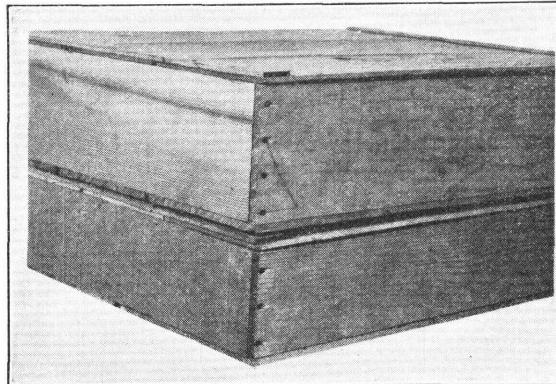


FIGURE 11.—Boxes with cleated tops. The advantages of this type of box are well worth the slight additional cost.

## BOX AND BARREL LININGS

A good-quality 30-pound parchment or waxed parchment paper should be used in lining the boxes or barrels. Usually the waxed paper is more nearly blood proof than the parchment, and gives better protection from blood stains. The parchment liner, however, is less easily torn and more easily handled. All things considered, a high-grade parchment, waxed on one side, is preferred to other types. The parchment is strong and easily handled and the waxing

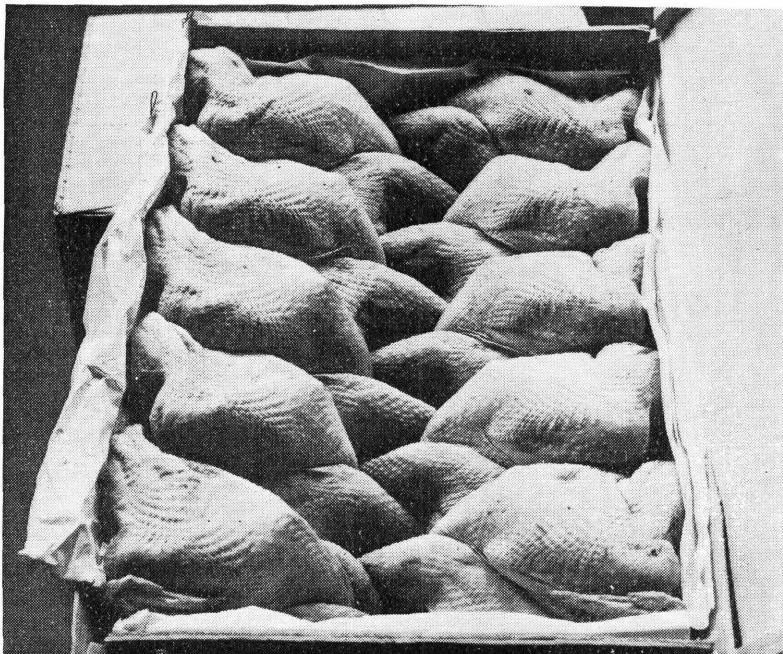


FIGURE 12.—A well-packed box of turkeys packed breast up. Each side liner should be long enough to reach the opposite side of the box.

renders it practically moisture proof and protects the skin of the turkeys from drying out.

At least two strips of paper should be used in lining the boxes, both of them cut to fit the size of box. The first strip should be placed crosswise of the box and the second lengthwise, so that they cross each other at the bottom. The strips should be sufficiently long to allow them to overlap each other at the top of the box when it is filled. (Fig. 12.) This will give a double thickness of paper around both the top and the bottom, where the turkeys are most susceptible to damage from box rubbing. Somewhat less than one-half pound of paper will be required for each box.

Box liners can be bought already cut, any given size, or can be bought in rolls and torn off at any length desired. If the rolls are used, they should be placed in a regular paper rack fitted with a blade for tearing a straight edge. The required length for each liner

should be marked on the counter on which the rack rests, so that strips of a uniform length can be torn off without measuring each time.

#### BOX PACKING

No matter how good the quality of the turkeys or how carefully they are dressed and graded, much of the sale value is lost if they are not well packed. An attractive package means a great deal in making sales, and considerable money is lost each year by operators who do not take the necessary precautions in packing.

There are three methods of box packing: The side pack, the slant pack, and the breast-up pack. The side pack is not used as much as

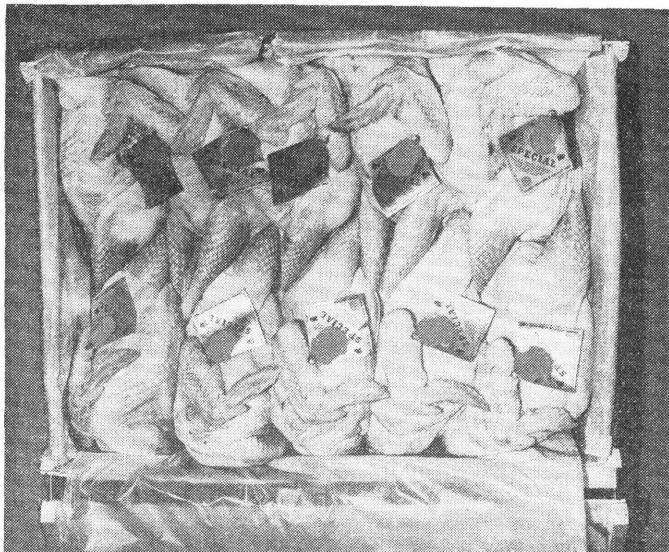


FIGURE 13.—A well-packed box of turkeys, side packed. Heads and feet are hidden, and uniform sizing adds to the attractiveness of the box

formerly, and the slant and breast-up packs are coming more and more into favor.

With the side pack, the first turkey placed in the box should be placed with the breast toward the operator, wing up. The second turkey should be placed with the back toward the operator, and against the end of the box, and the butts of the two turkeys should be interlocking. The feet and heads should be bent underneath the birds, so they will not show when the box is opened. (Fig. 13.) The packing is then continued, the turkeys being alternated from one side to the other until the box is filled.

The slant pack is used chiefly in packing tom turkeys. It makes possible the use of the same sized box as is used in packing the hens. In starting the pack both of the turkeys in the end of the box are packed with the backs toward the operator. The other turkeys are also packed with backs toward the packer and are all slanted so that the breastbones of the first two turkeys will lie against the sides

of the adjacent turkeys. The turkeys will then rest neither on the side nor back, but mostly on the hip and wing. The heads should be tucked under so as not to show, and the feet should rest under the opposite bird. The breasts of the last two turkeys should lean against the end of the box and should fit very tightly so that all space is taken up. The entire contents should be packed so snug that the turkeys can not shift around as the box is handled.

With the breast-up pack the end of the box farthest from the operator should be elevated at least 12 inches higher than the nearest end, to keep the turkeys in place as they are being packed. The first turkey is placed breast up in the lower end of the box. The head should be bent down, a little to one side, and tucked under the back. One leg of each turkey may be placed between the legs of the opposite carcass in order to hold the birds more upright in the box, or, if care is taken, both legs may be extended along the side of the opposite turkey and the same results obtained. The packing continues first on one side, then on the other, until the box is filled. The last two turkeys should fit very tightly in the box to prevent shifting.

In either style of packing the paper lining is next folded over the top and the lid put on for nailing. If only one size of box is used the hens may be packed crosswise of the box and the toms lengthwise. Under either method the main point is to see that all turkeys fit tightly in the container and are fully protected by the paper lining.

#### NAILING AND STRAPPING BOXES

The boxes should be securely nailed. Sixpenny cement-coated nails are used in nailing the bottoms of the boxes, using at least two nails at each end of the narrow boards and three nails at each end of the wide boards. Four such nails should be used at each end of the sides. In nailing the tops of the boxes smaller nails and fewer of them should be used. Fivepenny wire nails are the most desirable; and unless the top boards are very wide two nails at each end of each board will be enough. If a cleated top is used, four nails at each end of the box will be enough to hold the cover in place, and it will be easier to remove the cover for inspection than if more nails are used.

The 32-inch box should be wired or strapped at each end if shipment is to be made to a distant market. No strapping is necessary on smaller boxes. Medium-sized boxes should be wired with only one wire, directly around the center of the box.

Wire is ordinarily desirable, except when turkeys are packed for export or for some special contract. Metal straps are then used, but they are difficult to remove unless a crimp seal is used; and most merchants object to this or any other device that delays their operations during the busy season. Thirteen-gage galvanized round wire, having a tensile strength of not less than 300 pounds, should be used in wiring. The wire or straps should be drawn tightly around the box, preferably with machines especially constructed for the purpose. Wires of any desired length can be bought from almost any hardware store.

When metal straps are used, they should be not less than three-eighths inch turned edge, or one-half inch flat metal, 0.015 inch in thickness. Unless the straps are crimped tight, they should be nailed

at the edge of the box so that the nails fastening them will penetrate the cover boards and the box ends. As the wires require no nailing, it is best to place them about 4 inches from each end; this gives added support to the center of the box.

If the boards of the cover are not wide enough to cover the box completely, the outside boards should be flush with the box sides and any opening between the boards should be near the center.

#### BARREL PACKING

Barrels should always be new. The side of the barrel should be lined with parchment paper cut long enough to fold over the top when the barrel is packed. Either parchment or waxed paper is suitable and should be bought in rolls wide enough so that three strips will completely line the barrel and when folded over will give three thicknesses of paper across the top. Between each two layers of turkeys and at the bottom of the barrel a paper circular lining cut to fit the barrel should be placed.

The "squat" and the side pack are both used. The squat pack is usually preferred.

When squat packing in barrels is to be employed the turkeys are cooled on racks, the heads being pulled down tightly between the legs of the birds while they are still warm, and the legs folded up along the breasts. If cooled in this position, the turkeys retain this shape, which makes packing easy. After cooling, the turkeys are placed on their butts in the barrel with backs against the side of the barrel. They are packed as tightly as possible. When small birds are packed in this way an opening remains in the center of the barrel; this opening may be filled with turkeys, placed breast down. A sheet of paper is placed over each layer of turkeys, and the operation is continued until the barrel is filled, the top layer of turkeys protruding an inch or two above the top of the barrel. The barrel should then be rocked back and forth until the turkeys are level with the top or slightly below it. Under no condition should the turkeys extend above the top after they have settled from the rocking. The three thicknesses of paper lining are then folded over the top, a burlap cover is put on, and a hoop is securely nailed over the burlap. The burlap covering should be cut off about 6 inches below the bottom of the hoop. Barrels are sometimes placed on top of each other, and if the burlap comes only flush with the hoop, the weight of the top barrel is likely to pull the burlap loose, thus exposing the turkeys.

When the side pack is used the bottom layer of turkeys is packed on the sides with backs against the barrel and the heads and feet drawn in toward the center. The heads of the next layer are folded under the bottom wings; the necks are packed tight against the butts so they rest on the legs of the preceding turkey. Under this method neither the heads nor the feet of any of the turkeys will show when the barrel is filled.

#### MARKING THE PACKAGES

Boxes and barrels should be plainly stenciled with the gross, tare, and net weights, number of birds, sex, age, and grade. Private brands or trade-marks usually are put on the packages by the packer.

The stenciled figures should be at least 1 inch high on boxes and 2 inches on barrels. The gross, tare, and net weights are usually shown on the lower right-hand corner of the box, and the number of turkeys, grade, age, and sex on the lower left-hand corner.

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STATION (OR LOT)

NO. \_\_\_\_\_

PRIVATE BRAND

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10 U. S. PRIME Y. T.

187  
17  
—  
170

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When barrels are used, the trade-mark or private brand is usually stenciled on the burlap and the weight is stenciled on the side. If the Government grades are used, the grade name should be stenciled on the side and never on the burlap covering alone.

To prevent smudging from rubbing, all stenciling should be done between the two top hoops rather than on the bilge of the barrel. A quick-drying black ink gives the best results.

#### SHARP FREEZING

If the turkeys are to be shipped to a distant market they should not be held in the cooler longer than three or four days before shipping. If necessary to hold them longer in order to complete a full car, the carcasses, as soon as boxed, should be put in a sharp freezer (in which a temperature of at least 0° F. or preferably -5° is maintained) and allowed to stand for 24 hours. This gives them a hard chilling and, if shipped at once, they will carry to market with practically no danger of spoilage. They should never be put into the sharp freezer until all animal heat has been thoroughly removed from the carcasses and, once in the freezer, should remain there until shipped.

Handling boxes of turkeys requires special care. The boxes should never be stood on end, and they should be handled with as little jar as possible. Even though carefully packed, the birds are easily dislodged in the box before they are hard chilled, and if packed on end, they have a tendency to settle down and leave a vacant space at the top of the box. The practice of placing the boxes upside down in the freezing room to flatten the breasts is of doubtful value and necessitates considerable handling.

In packing the boxes in the cooler or freezer rooms they should be stripped with slats at least five-eighths inch thick between the layers of boxes to allow the cold air easy access to each box. If slats are not available, the boxes should be so spaced that each successive row will rest on the edges of the row underneath. This will leave an open space between rows nearly the width of the box.

## SHIPPING INVOICES

A shipper should make a complete itemized invoice to cover the contents of each car shipped. The invoice should contain the following information: Place and date of shipment, name and address of the receiver, car initials and number, car routing, car-seal numbers, and a list of the contents of the car showing the number of packages of each weight, class, and grade. A copy of this invoice should be mailed immediately to the receiver, so that he can offer the car for sale before it arrives. When grading is done by a licensed Government grader, all these items, together with other detailed information, will be given on the grading certificate issued on each car lot graded. It is well to forward a copy of this certificate to the receiver.

## CAR LOADING

The refrigerator car should be iced 24 hours before loading, in warm weather, and 12 hours before, in cold weather. The temperature of the car should be reduced at least to freezing. When the

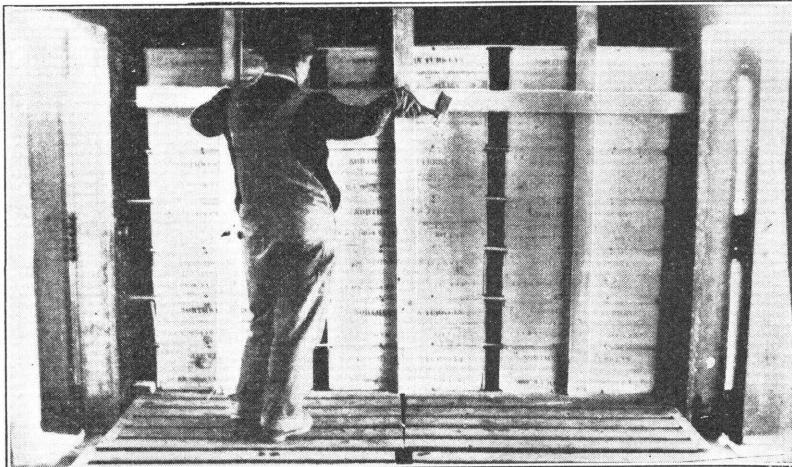


FIGURE 14.—Beginning the center bracing in a refrigerator car. Two by four inch pieces are placed vertically, one near the center of each stack of boxes. Each side is braced in the same way, and the bracings are held tight with 2 by 4 inch crosspieces set between the uprights. Note the slats between each two layers of boxes, and the vertical and horizontal bracing, which permits air circulation and rapid cooling.

movement to market will require three to four days crushed ice should be used, with 10 to 15 per cent of salt added, depending upon weather conditions. Under ideal conditions each 1 per cent of salt added will lower the temperature of the car 1° F. below the temperature obtained when ice alone is used.

The car should be examined before loading to make sure that the drainpipes are open, the ice bunkers are in good condition and sufficiently filled, enough floor racks are available, the car is well cleaned, and the doors fit tightly.

Always place barrels and boxes on the floor racks, which are usually part of the refrigerator-car equipment; never place them

on the floor of the car. When loading the car, begin in the ends and load toward the doors in the center.

Boxes should be packed lengthwise of the car, their ends tight against each other but the rows 2 or 3 inches apart. Strips of wood one-quarter or one-half inch thick should be placed between the boxes crosswise of the car to allow air circulation throughout the car and to hold the boxes in place. (Fig. 14.) Ordinary building lath makes good stripping, or strips may be ordered cut to the width of the car. The strips should be held in place with four-penny or fivepenny nails, one strip on top of each end of the box. One nail for each box is enough, as side shifting is not so likely as end shifting. The boxes should be packed as tightly as possible.

Any space left in the center of the car should be securely wedged with wooden bracing. The car should not be filled more than three-fourths of the way to the top, as the temperature at the top of the car is always several degrees higher than at the bottom. An ordinary refrigerator car two-thirds full will easily carry between 20,000 and 25,000 pounds.

#### A FINAL WORD

A good turkey is a valuable food product. At a retail price of 40 cents a pound, a 15-pound turkey costs the customer \$6. It is to the interest of the producer, packer, and retailer to see that the customer is satisfied with her purchase, so that she not only will continue to use turkey as the center of the Thanksgiving and Christmas dinners, but will buy one occasionally at other times as well.

Only through extreme care in breeding and rearing and in dressing and marketing can good turkeys be offered on the retail market. The cost, time, and labor involved in careful preparation for market may not seem worth while to the careless producer or dealer, yet it is only by placing a quality product on the market, thereby encouraging consumption, that producers can expect to market the annual turkey crop at a profit that will justify large production.

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